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PREVALENCE OF HIV/HBV, HIV/HCV AND HBV/HCV CO-INFECTIONS AMONG DRUG USERS IN A TERTIARY CARE PUBLIC HOSPITAL

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ABSTRACT

OBJECTIVE

To find out the prevalence of HIV/HBV, HIV/HCV and HBV/HCV Co-infections among the drug users in a tertiary care public hospital.

STUDY DESIGN

Descriptive study.

PLACE AND DURATION OF STUDY

The study was conducted for a period of 1 year in Drug Addiction Treatment, Rehabilitation and Counseling Center, Department of Psychiatry and Behavioural Sciences, Mayo Hospital, Lahore.

SUBJECTS AND METHODS

A total of 453 drug users admitted in drug addiction ward from August 2016 to July 2017 participated in the study. The study included an interview and blood testing. The questionnaire covered demographic characteristics as well as risk factors. Additionally three types of blood screening tests including Unigold, Determine and Bioline were used. Of 453 drug users 51 (11.3 %) did not get screened and left hospital uninformed as LAMA. Therefore their data was discarded.

RESULTS

Out of 402 drug users, 394 (98%) were male and 8 (2%) were female. The age range of the participants was 16-66 years with mean age of 32.2±8.9 years old. About 343 (85.3%) were belonging to low socioeconomic status and 143 (35.6%) had previous history of imprisonment. 235 (58.5%) patients consisted of those who have been using drugs for five years or less while 82 (20.3%) have been using drugs for a period between 11 to 15 years. Among 402 patients, 85 (21.1%) drug users were HIV positive, 13 (3.4%) were Hepatitis B infected and 135 (34.0%) were Hepatitis C positive.

CONCLUSION

Co-infections were prevalent among drug users especially in those who took drugs through injections.

KEY WORDS

Prevalence, Drug users, Co-infections, HIV, Hepatitis

INTRODUCTION

History of psychoactive substances use by humans goes back to prehistoric times (i.e 8000 BC)¹. In past, these substances have been used therapeutically as well as in religious ceremonies, although quite less commonly for recreational purposes. As time passed, the purpose as well as the way of using these substances has been changed i.e. use of these drugs for pure pleasure has become more common. In modern world, Drug Abuse is a not uncommon.

Intravenous route is one of the common and important routes by which drugs of abuse (e.g. heroin & morphine etc) are taken. According to World Drug Report 2017, the global number of opiate users is 17.7 million². These drugs, when taken via intravenous route can cause transmission of blood borne infections. Results from multiple studies showed that unsafe injection practice was a major risk factor for transmission of blood borne infections, including HIV & Hepatitis (B & C) in developing countries³. In United States, there are about 800,000-1.4 million people infected with HBV whereas 2.7- 3.9 million people are infected with HCV. A large proportion of intravenous drug abusers are infected with HCV and HIV. About 85% of Intravenous drug abusers in United States came out to be infected with HCV in a study conducted by NIDA & CDC whereas about 60% HCV transmission is attributed to Intravenous drug use by CDC⁴. In a similar way, about 196,300 HIV infected Intravenous drug abusers are thought to be living in United States whereas estimated annual infection among IV drug abusers is 32%⁵. It was also found in various studies that people infected with HIV were also co-infected with HBV or HCV⁶⁻⁸. Prevalence of HBV co-infection in HIV infected individuals came out to be as much as 10-20%⁹. Similarly 82-93% of HIV infected individuals with positive history of IV drug abuse were found to have HCV co-infection¹⁰. The prevalence of HBV and HCV infection in Pakistan is estimated to be 4.8% and 5% respectively¹¹. Similarly 83,468 individuals are thought to be infected with HIV about half of which are not getting any Anti-Retroviral Therapy¹². In a survey conducted by United Nations in Pakistan, 6.7 million people were found to have been misusing drugs¹³, including 4 million Cannabis users and 1,06 million Opiates users¹⁴.

Knowing the above mention facts, it is logical to think that these drug abusers are at a greater risk of being infected not only with blood borne infections (including HIV, HBV & HCV), but also of co-infections i.e. HIV/HBV, HIV/HCV & HBV/HCV. This study aims to find prevalence of HIV/HBV, HIV/HCV and HBV/HCV co-infections among injecting drug users in a tertiary care hospital in Lahore, Pakistan.

SUBJECTS AND METHODS

Participants

A total of 453 drug users admitted in drug addiction ward from 1st of August 2016 to 31st of July 2017 participated in the study. As soon as patient came, their case history was taken and they were screened for HIV and Hepatitis (B & C). Of 453 drug users, 51 did not get screened because they left hospital without permission and therefore, their data was discarded from the study.

Instruments

Self-structured case history form was used to collect detail information regarding age, gender, residence (rural, urban), qualification, occupation, marital status, number of children (if married), siblings, birth order, monthly income, SES, duration of drug abuse, source, route of drug administration, family history of drug abuse, family history of psychiatric illness, comorbid psychiatric illness, any other medical disease, HIV, history of blood diffusion, problem with police, history of imprisonment, number of previous treatments, number of relapses, mode of discharge.

Secondly, every patient was tested for HIV and hepatitis (B & C) through initial screening test. Patients who had positive status on initial screening tests were referred to special testing clinic for further confirmation. For HIV screening, three types of screening tests were used further: Unigold, Determine and Bioline. Patient's diagnosis of HIV positive was confirmed if two of these tests were positive. Patients who were HIV positive were provided with special care.

Procedure

This study was conducted at Drug Addiction center of Department of Psychiatry and Behavioral Sciences, Mayo Hospital Lahore after approval from Ethical Review Board of the institution. The patients were approached for data collection. They were informed about the nature and purpose of the study. All the ethical considerations were taken into account. Study was approved by Ethical Review Board of King Edward Medical University. Patients' consent was taken and they were assured of confidentiality of the information they provided. Data were collected through self-structured case history form and Hepatitis/HIV testing. Data were entered in SPSS 20.0 version and then analyzed and reported accurately.

RESULTS

Data was analyzed by using SPSS 20.0 version. Demographic variables were assessed through descriptive statistics using frequency and percentages for categorical, mean and standard deviation for continuous/ quantitative variables, while cross tabulation analysis was run to identify the proportion of co-infections among drug users.

The total sample of 402 patients was included in the present study. There were 394 male (98%) and 8 females (2%) with mean age of 32.2±8.9 years. Up to 138 (34.3%) of drug users were illiterate and about 239 (59.5%) had educational level less than high school. Furthermore, 133 (33.1%) were laborer, 68 (16.9%) were unemployed while 100 (24.9%) were office workers at private or government institutions and 294 (73.1%) were urban residents. About 343 (85.3%) were belonging to low socioeconomic status and 143 (35.6%) had previous history of imprisonment.

Further 254 (63.2%) were married and 128 (31.8%) were single. It was revealed that 235 (58.5%) patients consisted of those who have been using drugs for five years or less while 82 (20.3%) have been using drugs for a period between 11 to 15 years. The mean duration of drug injection was 2.02 years. A total of 137 (34%) patients reported to have history of drug abuse in their families and 54 (13.4%) reported history of psychiatric illness in their families. It was found that 48 (11.9%) patients also have history of blood diffusion.

Among 402 patients, 21.1% drug users were HIV positive, 3.4 % were Hepatitis B infected and 34.3% were Hepatitis C positive. In current study Hepatitis C was more prevalent than HIV and Hepatitis B (table 1).

Table 1
Frequency and Percentages of HIV and Hepatitis in drug users

Status of Disease		
Disease	Positive	Negative
HIV	85 (21.1)	317(78.9)
Hepatitis B	13 (3.4)	389 (96.6)
Hepatitis C	135 (34.0)	262 (66.0)

(Percentage in parenthesis)

Results showed that out of 13 drug users with HBV positive, 5 (38.5 %) were co-infected with HIV. Among 135 drug users with HCV positive, 68 (50.4%) were HIV co-infected. Moreover, 8 (66.7%) HBV positive drug users were co-infected with HCV. So the frequency of HIV/HBV, HIV/HCV, and HCV/ HBV co-infections among participants were 38.5%, 50.4%, and 66.7%, respectively.

Table 2
Frequencies and Percentages of HIV/HBV, HIV/HCV, and HCV/ HBV Co- infections among Drug Users (N=402)

Status of Disease		
Disease	Positive	Negative
HIV/HBV	5 (38.5)	8 (61.5)
HIV/HCV	68 (50.4)	67 (49.6)
HCV/HBV	8 (66.7)	4 (33.3)

DISCUSSION

Worldwide prevalence of HIV, HBV and HCV co-infection varies greatly making geographical location an important determinant. Results from different studies have showed prevalence of co-infection as low as 0%¹⁵ to as high as 100%¹⁶ for different populations in different countries.

In our study, there was 38.5% prevalence of HIV/HBV co-infection among the IV Drug Users (IDUs) which is significantly higher than that shown by various studies¹⁵⁻¹⁹. This might be because of the fact that our study population was consisted almost entirely of IV Drug users. A similar study with similar population in West India showed significantly high prevalence of HBV/HIV co-infection i.e.100%¹⁶. HIV/HCV co-infection also showed variable prevalence in various countries ranging from 2.93%²⁰ to as high as 90%²¹.

Our study showed 50.5% prevalence of HIV/HCV co infection. Similarly our study showed 6.6% HBV/HCV co-infection which is in accordance with the values obtained in various studies throughout the world¹⁵⁻¹⁹.

As this study is carried out in a tertiary care hospital with a small subset of population, it is suggested that the results of this study should be taken in a same way and further research should be done on a larger scale. Also, keeping in view the variable frequency of these infections around the globe, we suggest that further research should be done to find out other determinants of these infections. We also suggest of further research to be done in Pakistan for HIV, HBV & HCV

co-infections, not only among IDUs but also among normal individuals. Moreover, measures to stop unsafe injection practice should be taken in order to decrease the infection.


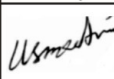
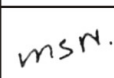
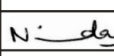
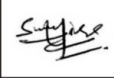
The patients were only taken from a tertiary care public hospital, in order to diversify the sample and generalize the findings patients from private hospital should also be included. The female patients were negligible in the present study, a separate study on female patients should also be conducted in order to see the rate of HIV, HBV and HCV viral infection. Further, equal sample of female should also be including in the future study in order to conduct the comparative study.

CONCLUSION

This study showed that prevalence of HIV, HBV & HCV co-infection among IDUs is significantly high.

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